



**THE CITY OF WINNIPEG  
PUBLIC WORKS DEPARTMENT  
ENGINEERING DIVISION**

## **STREET CUTS MANUAL**



**2013**



**Winnipeg**  
*at your service.*

## **KEY POINTS FOR 2013**

### **STREET CUT PERMITS (PAGE 4)**

- Prior to issuance of a Street Cut Permit on streets that are identified as **NEW** or in **GOOD** condition by the City's Asset Management Branch, the applicant must arrange a meeting with the designated employee.

### **REPAIRS ON REGIONAL STREETS (PAGE 15)**

- 24 hour work activities
- Weekend work activities
- Steel plating of excavations during a.m. and/or p.m. peak rush hour periods

### **PAVEMENT RESTORATION GUIDELINES**

- Asphalt over concrete (page 16)
- Portland cement concrete (page 17)

# TABLE OF CONTENTS

## MESSAGE FROM THE DIRECTOR

The Public Works Department under the authority of the amended *Streets By-law 1481/77* has revised many of the processes pertaining to Street Cuts made in the Right-of-Way. This *Street Cuts Manual* in conjunction with, the *Streets By-law* and City of Winnipeg *Standard Construction Specifications* become the guiding documents to the making, maintenance and restoration of street cuts.

The goal of the new By-law amendments and the *Street Cuts Manual* is to make the process of working in the Right-of-Way more straightforward, less frustrating and easier to enforce while better protecting the public interest and safety. As well as minimizing disruptions. The *Street Cuts Manual* will be published to the City's web page annually to assist those working in the Right-of-Way.

Brad Sacher

Director of Public Works

<b>STREET CUTS MANUAL</b> .....	<b>1</b>
REGIONAL STREET CUTS .....	1
STREETS BY-LAW 1481/77 .....	1
DISCLAIMER .....	1
<b>DEFINITIONS</b> .....	<b>2</b>
<b>LICENSING</b> .....	<b>3</b>
LICENCE REQUIREMENTS.....	3
<i>All Street Cuts</i> .....	3
<i>Regional Street Cuts</i> .....	3
QUALIFICATIONS .....	3
<i>Licence Contact</i> .....	4
<b>PERMITS AND APPROVALS</b> .....	<b>4</b>
STREET CUT PERMITS .....	4
<i>Permit Contact</i> .....	6
REGIONAL STREET CUT SECURITIES .....	6
SUBMISSION AND APPROVAL OF DRAWINGS.....	7
<i>Underground Structures Contact</i> .....	7
<b>CONSTRUCTION</b> .....	<b>8</b>
EXCAVATION .....	8
BACKFILL .....	8
BOULEVARD .....	9
<i>Mechanical Compaction</i> .....	9
<i>Jetting, Flooding and Tamping of Backfill</i> .....	10
TEMPORARY RESTORATION .....	11
CAPPING MATERIALS.....	11
FULL RESTORATION ON REGIONAL STREETS .....	12
REGIONAL STREET INSPECTION .....	13
<i>Pre-Restoration Inspection</i> .....	13
<i>Restoration Inspection</i> .....	13
WORKSITE PROTECTION .....	13
<i>Site Clean Up</i> .....	13
<i>Protection of Trees</i> .....	14
WARRANTY FOR REGIONAL STREET RESTORATION .....	14
<i>Permanent Restoration by Applicant</i> .....	14
REGIONAL LANE CLOSURES .....	14
REPAIRS ON REGIONAL STREETS .....	15
<i>Traffic Management Contact</i> .....	15
PAVEMENT RESTORATION GUIDELINES .....	16



# STREET CUTS MANUAL

NOTES ..... 18  
 CONTACTS..... 19  
 CUT PERMIT AREAS ..... 20

APPENDIX “A” IMAPS GUIDE  
 APPENDIX “B” STANDARD TRENCH AND EXCAVATION BACKFILL  
     1) UNDER BOULEVARD OR SOFT SURFACE MEDIAN  
     2) UNDER STREET PAVEMENT  
     3) UNDER MISCELLANEOUS CONCRETE SLABS, PAVING STONES OR ASPHALT HARD SURFACE  
 APPENDIX “C” GRADING REQUIREMENTS FOR IMPORTED BACKFILL  
 APPENDIX “D” DESIGN REQUIREMENTS FOR CONCRETE USED FOR UNDERGROUND STRUCTURES  
 APPENDIX “E” CONCRETE FOR TEMPORARY RESTORATION OF UTILITY STREET CUTS  
 APPENDIX “F” FULL DEPTH PATCHES: DETAILS OF MOVING AND TIED JOINTS  
 APPENDIX “G” CONCRETE FOR EARLY OPENING OF PAVEMENTS  
 APPENDIX “H” CONCRETE STRENGTH AND WORKABILITY  
 APPENDIX “I” PROTECTION OF TREES  
 APPENDIX “J” ASPHALT & ASPHALT OVER CONCRETE PRIORITY I & II  
 APPENDIX “K” ASPHALT & ASPHALT OVER CONCRETE PRIORITY III  
 APPENDIX “L” PORTLAND CEMENT CONCRETE PRIORITY I & II  
 APPENDIX “M” PORTLAND CEMENT CONCRETE PRIORITY III  
 APPENDIX “N” SCHEDULE “E” TO STREETS BY-LAW NO. 1481/77

The Street Cuts Manual has been prepared by the Public Works Department, Engineering Division to provide information and details on the process of making cuts in the City of Winnipeg Right-of-Way.

## REGIONAL STREET CUTS

Public Works requires all cut permit applicants or their agents to restore their own hard surface cuts made on Regional Streets between and including May 1<sup>st</sup> and October 31<sup>st</sup>, at the time of backfill. Only contractors who are licensed under the Streets By-law and hold a valid “*Regional Street Restoration Contractor’s Licence*” to restore hard surface cuts in the Right-of-Way will be allowed to do so.

## STREETS BY-LAW 1481/77

The amended *Streets By-law* can be found on the following City of Winnipeg website: <http://www.winnipeg.ca> under City Hall, choose By-laws. Reference to the Streets By-law throughout the *Street Cuts Manual* is always *By-law 1481/77*.

## DISCLAIMER

Information in this manual is intended to supplement the *Streets By-law 1481/77* including all amending By-laws and the City of Winnipeg *Standard Construction Specifications*



## DEFINITIONS

“**designated employee**” means the Director and any employee of the City to whom the Director has delegated authority to enforce or administer all or part of the By-law;

“**Manual of Temporary Traffic Control**” means the Manual of Temporary Traffic Control in Work Areas on City Streets approved by Council from time to time and, unless otherwise specified, refers to the most recent edition;  
[http://winnipeg.ca/publicworks/InformationAndResources/TrafficControl/manual\\_of\\_temp\\_traffic\\_control.asp](http://winnipeg.ca/publicworks/InformationAndResources/TrafficControl/manual_of_temp_traffic_control.asp)

“**Street**” means any place or way, including any structure forming part thereof, which or any part of which has been dedicated as a roadway, lane, avenue, footpath, walkway, road or highway pursuant to The Real Property Act or which the public is ordinarily entitled to use for passage, with or without fee or charge therefore, and includes all the space between the boundary lines thereof;

“**hard surface cut**” means any cut, break, tear or excavation made on pavement, walks and/or curbs

“**Street Cuts Manual**” means the *Street Cuts Manual* issued by the Director under clause 4.12.02(1) of the *Streets By-law* and, unless otherwise specified, refers to the most recent edition of the Manual posted on the City of Winnipeg website  
<http://winnipeg.ca/publicworks/Services/ContractorsCutRestoration.asp>

“**Standard Construction Specifications**” means the Standard Construction Specifications for infrastructure work on City Streets approved by the Public Works Department and, unless otherwise specified, refers to the most recent edition at; <http://www.winnipeg.ca/matmgt/Spec/Default.stm>



## LICENSING

### LICENCE REQUIREMENTS

#### **All Street Cuts**

Prior to making a street cut a person must hold a subsisting and applicable licence issued under:

- the *Streets By-law*
- the *Private Access By-law*
- the *Waterworks By-law* or the *Sewer By-law*
- or is authorized by *Part 8* (Boulevard Maintenance) of the *Neighbourhood Livability By-law*

<http://www.winnipeg.ca/> under City Hall, choose By-laws

#### **Regional Street Cuts**

Prior to restoring Regional Street hard surface cuts the permit applicant or their agent must hold a subsisting and applicable *Streets By-law Licence* and a *Regional Street Restoration Contractor’s Licence* issued under the *Streets By-law*.

### QUALIFICATIONS

Prior to receiving a *Streets By-law Licence* and/or a *Regional Street Restoration Contractor’s Licence* the applicant must;

- Satisfy the Director that they have the knowledge and the ability to meet the requirements of this *Street Cuts Manual*, the *Streets By-law* and other applicable by-laws, the *Standard Construction Specifications* and the *Manual of Temporary Traffic Control*
- Provide evidence of a policy of commercial general liability insurance consistent with *Section 3.05* and *Section 6* of the *Streets By-law*

## **Licence Contact**

Public Works Department  
Engineering Division  
Technology Services Branch  
106-1155 Pacific Ave.  
Winnipeg, MB, Canada R3E 3P1  
204-986-3385  
(Monday-Friday) 08:00 to 16:00

Note: For 2013, there will be no fees associated with the issuance of a “*Regional Street Restoration Contractor’s Licence*” if you hold a valid *Streets By-law Licence*.



## **PERMITS AND APPROVALS**

### **STREET CUT PERMITS**

- Prior to issuance of a Street Cut Permit on streets that are identified as **NEW** or in **GOOD** condition by the City’s Asset Management Branch or are on streets identified on the current capital program, the applicant must arrange a meeting with the designated employee (Area Cut Inspectors – See Contacts, page 19) to obtain approval for the permit
- The permit repair fees for street cuts on **NEW** or **GOOD** streets shall be sufficient to restore the pavement to its original condition
- No person shall cut, break, tear up or remove any road surface or make any excavation in, on, over or under a street for any purpose without first having obtained the appropriate Permit from the Director

- Except in the case of emergency repair work, the person responsible for making a street cut must make an application for a Street Cut Permit at least forty-eight (48) hours prior to the commencement of work
- When a Street Cut Permit has not been obtained prior to commencement of work, a late fee will be charged
- The street pavement ratings and current capital program are available on iMaps at the City of Winnipeg website:  
<http://map2.winnipeg.ca/iMaps/Disclaimer.stm?http://map2.winnipeg.ca/iMaps/Main.aspx?>  
(See Appendix “A” iMaps Guide)
- As part of an application, the applicant must pay a Permit Fee (administration) and one or more Street Cut Repair Fees established by Council from time to time. A Street Cut Repair Fee may be based on the size of the street cut or on the size of the street surface that, in the reasonable opinion of a designated employee, may be damaged or undermined by the street cut
- At the discretion of the designated employee a single permit can be issued for a location that has multiple cuts, providing the location does not exceed one (1) city block and the work is undertaken in a continuous manner
- Payments for add-to permits required for additional cut quantities are due within twenty-one (21) calendar days from date of inspection by the designated employee
- Permit refunds will not include the cut permit fee (administration)

- The restoration process for multiple cuts related to Capital Projects must be approved by the Permits Administration Technologist III (See Contacts, page 19) and may require the applicant to contract out the restoration along with hiring a private consultant for engineering services

### ***Permit Contact***

Public Works Department  
 Customer Services Division  
 107-1155 Pacific Ave.  
 Winnipeg, MB, Canada R3E 3P1  
 204-986-3184  
 (Monday – Friday) 08:30 to 16:30

### **REGIONAL STREET CUT SECURITIES**

In lieu of providing Street Cut Repair Fees between and including May 1<sup>st</sup> to October 31<sup>st</sup> for Regional Street pavement cuts, the applicant may provide security in a form satisfactory to the Director and in an amount determined by the Director to adequately protect the City from risks associated with the appropriate or inadequate restoration of Regional Street cuts.

Note: A non-refundable Permit Fee (administration) is still required.

### **SUBMISSION AND APPROVAL OF DRAWINGS**

- In addition to obtaining any permit, a person must submit drawings to and obtain approval from the designated employee from Underground Structures before carrying out any installation, reconstruction, repair, renewal or realignment of a structure in, on, over or under a street
- The drawings required must:
  - be in a form acceptable to the designated employee
  - include any information reasonably required by the designated employee in order to approve the drawings
  - be submitted at least seven (7) days prior to the work
- Where the work results in changes of alignment or grade or when requested by the designated employee to do so, the person carrying out the work must submit “as built” drawings to the designated employee within sixty (60) days after the work has been completed
- Inquiries regarding Capital Projects should be directed to the Permits Administration Technologist III (See Contacts, page 19)

### ***Underground Structures Contact***

Public Works Department  
 Underground Structures Branch  
 107-1155 Pacific Ave.  
 Winnipeg, MB, Canada R3E 3P1  
 204-986-6401  
 (Monday – Friday) 08:30 to 16:30

**EXCAVATION**

- No person shall cut, break, tear up or remove any road surface or make any excavation in, on, over or under a street for any purpose without first having obtained the appropriate permit from the Director
- All excavations shall be done in accordance with Standard Construction Specification CW 2030 and CW 3230
- All pavements must be saw-cut full-depth in accordance with CW 3230
- Where the perimeter of a street cut is within one (1) metre of a joint or the pavement edge, the area of the repair shall be extended to the pavement edge and add-to permit fees shall be paid to reflect this addition. Any curb which has to be replaced as a result of this extension will also be charged on the permit as an add-to.
- All utility clearances are the responsibility of the permit holder or their agent

**BACKFILL**

- All backfilling shall be done in accordance with CW 2030 (See Appendix “B”) unless the *Street Cuts Manual* indicates otherwise
- Trenches and excavations located more than 450mm laterally of a hard surface cut in a boulevard or grassed area: Backfilled with compacted excavated material in accordance with CW 2030

- Boulevard cuts more than 750mm deep and less than 450mm laterally of a hard surface cut and areas proposed to be paved: Backfilled with Type 1 material compacted in accordance with CW 2030 and leveled off 300mm below finished grade. Excavated material may then be used to bring the cut to grade
- Type 1 material is to consist of well graded pit-run material in accordance with Table CW 2030.1 (See Appendix “C”)
- All hard surface cuts: Backfilled with Cement-Stabilized Fill in accordance with CW 2030 and Table CW 2160.1 (See Appendix “D”), to a minimum of one (1) metre depth from the underside of the finished pavement unless an alternate class of backfill is authorized by the Director
- Any voids discovered in the course of construction are to be filled with Flowable Stabilized Fill in accordance with CW 2030 and Table CW 2160.1 (See Appendix “D”)

**BOULEVARD*****Mechanical Compaction***

- All boulevard cuts as Class 2 Backfill: Use Type 1 material, with a vibratory compactor in maximum 300mm layers to at least 95% of Standard Proctor Density, in accordance with CW 2030
- All boulevard cuts as Class 4 Backfill: Use suitable excavated material compacted by mechanical means in maximum 600mm layers to a density equivalent to that of the surrounding unexcavated material, in accordance with CW 2030

## ***Jetting, Flooding and Tamping of Backfill***

- All boulevard cuts completed between and including May 15<sup>th</sup> and October 15<sup>th</sup> are to be flood tamped in accordance with CW 2030 within two (2) weeks of work completion
- All boulevard cuts completed between and including October 16<sup>th</sup> of the previous year and May 14<sup>th</sup> of the current year are to be flood tamped in accordance with CW 2030 by June 15<sup>th</sup> of the current year

### ***Procedure***

1. Make arrangements for water supply source in accordance with Specification CW 1120.
2. Use a minimum 25 millimetre diameter rigid pipe of suitable length for jetting excavations.
3. Insert the jetting pipe into the backfill to within 1 metre of the top of the pipe allowing the water jetting action to determine the rate at which the jetting pipe is worked through the backfill.
4. Locate jetting insertions in accordance with SD-003.
5. Continue jetting until water rises above top surface of backfill and begins to pond.
6. Tamp backfill with a backhoe mounted vibratory plate compactor once surface water has sufficiently dried.
7. Place and compact additional specified backfill material to maintain top surface of backfill at required elevation.

## **TEMPORARY RESTORATION**

The permit holder must ensure that the temporary restoration of all cuts are maintained at all times in a condition that is safe for which that portion of the street is reasonably expected to be put. This obligation continues until all cuts are fully restored to the satisfaction of the Director.

If the Director is of the opinion that any temporary restoration has created an emergency situation which can endanger the public or cause damage to a vehicle, the Director may protect the area and:

- a) telephone the permit holder at the phone number provided and advises the permit holder to repair the cut immediately, (**within 2 hrs.**) or
- b) make the immediate repairs

Note: Any cost incurred by the City for the maintenance of temporary restorations resulting from improper backfilling, workmanship, or compaction shall be passed on to the permit holder.

## **CAPPING MATERIALS**

A temporary pavement patch must be one or more of the following:

### **Regional/Collector/Residential Streets/Lanes/Walks/Medians**

- Temporary concrete (See Appendix “E”) over Cement-Stabilized Fill or,
- 75mm of hot mix asphalt over Cement-Stabilized Fill or,
- 75mm of cold mix asphalt over Cement-Stabilized Fill (**approved only when hot mix asphalt is unavailable**)



## FULL RESTORATION ON REGIONAL STREETS

- All restorations shall be completed by the City or its agents unless otherwise approved or directed by the Director of Public Works. Notwithstanding this, all hard surface cuts on Regional Streets made between and including May 1<sup>st</sup> and October 31<sup>st</sup> shall be restored by the applicant or their agent at the time of backfill
- A Regional Street Restoration Contractor's Licence as described in the City of Winnipeg *Streets By-law* is required in order to permanently restore any hard surface cuts on Regional Streets
- All restorations on Regional Streets as listed in *Schedule E* of the *Streets By-Law* (See Appendix "N") shall be done in accordance with the City of Winnipeg *Standard Construction Specifications* and comply with the *Street Cuts Manual* (See Appendix "F")
- All restorations on Regional Streets as listed in *Schedule E* of the *Streets By-Law* (See Appendix "N") are to be restored using Early Opening (24hr) concrete (See Appendix "G")
- Where the perimeter of a Regional Street cut is within one (1) metre of a joint or the pavement edge, the area of the repair shall be extended to the pavement edge and permit restoration fees shall be paid to reflect this addition. (The curb is incidental to the restoration)

## REGIONAL STREET INSPECTION

### ***Pre-Restoration Inspection***

A pre-restoration inspection of the cut is required to determine the extents of the restored area. The licensed contractor is responsible for arranging this inspection with the Regional Cut Inspector (see Contacts, page 19) at least twenty-four (24) hours prior to beginning restoration.

### ***Restoration Inspection***

A restoration inspection is required after the area is ready for concrete and prior to placement of the surfacing material (see Contacts, page 19). The City may, at its discretion, and at no cost to the permittee order Concrete (Slump, Air, and Compressive Strength) Tests (See Appendix "H"). Only use concrete by City approved suppliers with a mix design in accordance with *Standard Construction Specifications*.

<http://www.winnipeg.ca/matmgt/Spec/Default.stm>

## WORKSITE PROTECTION

Every excavation in a street shall proceed expeditiously and the permittee shall not allow a street cut excavation to remain open, unless the work is actively in progress.

All work within the Right-of-Way must be controlled in accordance with the *Manual of Temporary Traffic Control*.

Vehicular and pedestrian traffic is to be maintained with the structural capacity to maintain safe passage.

### ***Site Clean Up***

Upon completion of the temporary patch or permanent reinstatement of all cuts, all excess material must be removed from the area of the construction site and left in a safe, neat, and clean condition to the satisfaction of the Director.

### ***Protection of Trees***

The Contractor shall take precautionary steps as specified in Appendix “T” to prevent damage from construction activities to existing boulevard trees within the limits of the construction area. All damage to existing trees caused by the Contractor’s activities shall be repaired to the requirements of the City Forester or his designate.

### **WARRANTY FOR REGIONAL STREET RESTORATION**

#### ***Permanent Restoration by Applicant***

The permit holder is responsible for the repairs undertaken by the contractor or their agents necessary to correct settlement or surface deterioration for a warranty period of one (1) year following the date of acceptance of permanent restoration.

Any cost incurred by the City for repairs during the warranty period resulting from improper backfilling, workmanship, or compaction shall be passed on to the permit holder.

### **REGIONAL LANE CLOSURES**

The Contractor is subject to the Construction Agency responsibilities outlined in *Section 2 of the Manual of Temporary Traffic Control*. This includes, but is not limited to, the requirement to obtain approval from the Traffic Management Branch to work on Regional Streets.

If the restoration contractor is different than the cut contractor, the restoration contractor must contact the Traffic Management Branch to ensure that approval has been granted for the Regional Street lane closure.

### **REPAIRS ON REGIONAL STREETS**

When deemed necessary by the Director of Public Works, contractors doing work on Regional Streets are required to do all things necessary to expedite completion of the work. This includes all pavement restorations and is to be achieved through the use of;

- 24 hour work activities
- Weekend work activities
- Steel plating of excavations during a.m. and/or p.m. peak rush hour periods

The cut contractor and/or restoration contractor are required to contact the Traffic Management Branch prior to commencing work to ensure the applicable guidelines are followed.

#### ***Traffic Management Contact***

Public Works Department  
Transportation Division  
Traffic Management Branch  
101-1155 Pacific Ave.  
Winnipeg, MB, Canada R3E 3P1  
204-986-5640  
(Monday-Friday) 08:30 to 16:30

# PAVEMENT RESTORATION GUIDELINES

## A) Asphalt & Asphalt over concrete

Rated Pavement Condition of Segment	Regional (Priority I)		Collector (Priority II)		Local (Priority III)	
	Action Required	Responsibility	Action Required	Responsibility	Action Required	Responsibility
<b>New</b>	Grind & repave full lane width - length of project	Utility conducting work	Grind & repave full lane width - length of project	Utility conducting work	Grind & repave full lane width - length of project	Utility conducting work
<b>Good</b>		Cost-sharing with Public Works available <i>See note (A-3)</i>		Cost-sharing with Public Works available <i>See note (A-3)</i>		Decision after inspection by Public Works Department <i>See Notes (A-2) &amp; (A-3)</i>
<b>Fair</b>						
<b>Poor</b>	Decision after inspection by Public Works Department <i>See Note (A-2)</i>		Isolated repairs accepted	Utility conducting work	Isolated repairs accepted	Utility conducting work

**NOTES:**

(A-1) This table is only a guide. The actual extent of all pavement restorations are subject to pre-construction inspection, and final approval by the Public Works Department.

(A-2) Factors used by Public Works to determine the extent of pavement restoration: (Generally, in order of importance)

- Condition of pavement prior to start of project;
- Age of pavement;
- Classification of segment (e.g. arterial vs. collector);
- Planned work in the right-of-way (future street projects);
- Length of project;
- Number of cuts project requires (i.e. one cut at each end vs. 15 in a row, 10m apart)

(A-3) In some cases - locations where renewal work is warranted and/or Streets Maintenance is considering improvements in the current or following construction year - partnering with the Public Works Department may be possible. A pre-construction meeting with the Area Inspector is required to determine the extent of the work required and amount payable by the Department.

(See Appendix “J & K” for example drawings)

## B) Portland cement concrete

Rated Pavement Condition of Segment	Regional (Priority I)		Collector (Priority II)		Local (Priority III)		
	Action Required	Responsibility	Action Required	Responsibility	Action Required	Responsibility	
<b>New</b>	Full panel repair	Utility conducting work	Full panel repair	Utility conducting work	Half panel repair	Utility conducting work	
<b>Good</b>	Half panel repair		Half panel repair		Decision after inspection by Public Works Department <i>See Note (B-2)</i>	Decision after inspection by Public Works Department <i>See Note (B-2)</i>	
<b>Fair</b>	Decision after inspection by Public Works Department <i>See Note (B-2)</i>						
<b>Poor</b>	Decision after inspection by Public Works Department <i>See Note (B-2)</i>		Isolated repairs accepted	Utility conducting work	Isolated repairs accepted	Utility conducting work	

**NOTES:**

(B-1) This table is only a guide. The actual extent of all pavement restorations are subject to pre-construction inspection, and final approval by the Public Works Department.

(B-2) Factors used by Public Works to determine the extent of pavement restoration: (Generally, in order of importance)

- Condition of pavement prior to start of project;
- Age of pavement;
- Classification of segment (e.g. arterial vs. collector);
- Planned work in the right-of-way (future street projects);
- Length of project;
- Number of cuts project requires (i.e. one cut at each end vs. 15 in a row, 10m apart)

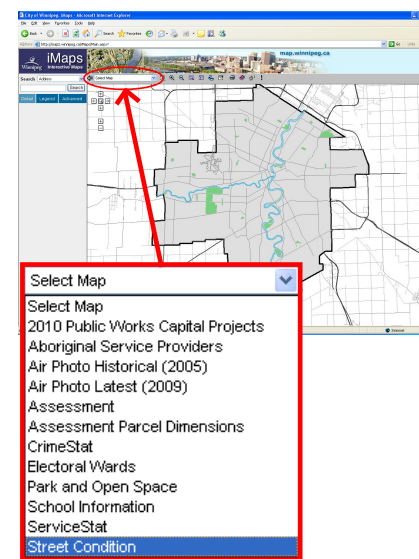
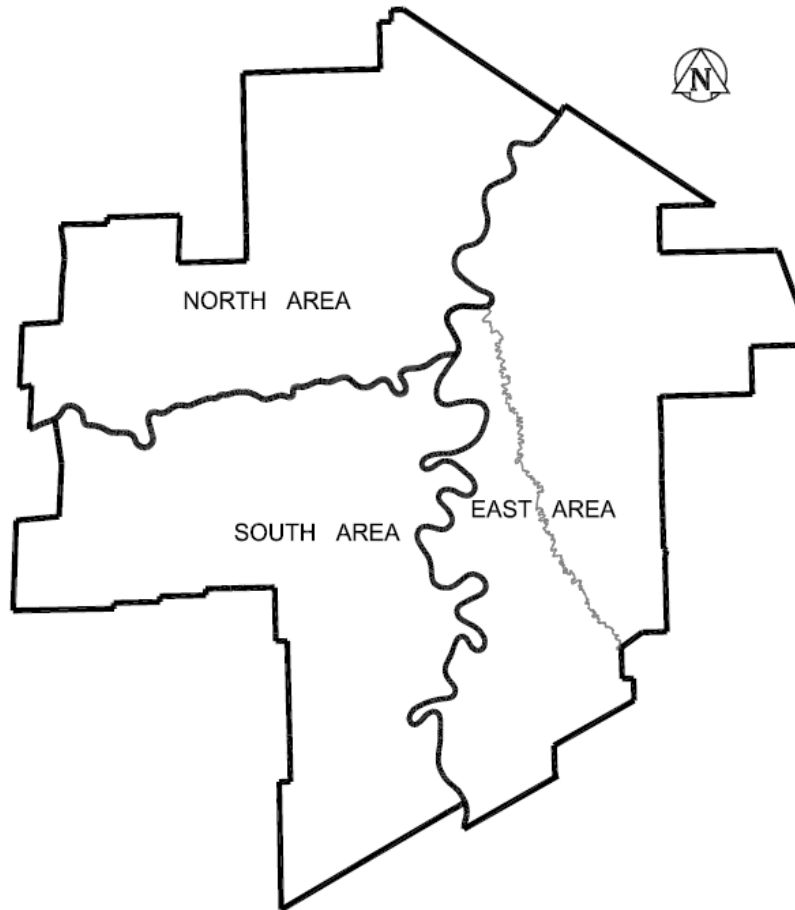
(See Appendix “L & M” for example drawings)



## APPENDIX "A" iMaps Guide

iMaps is located at:  
<http://www.winnipeg.ca> and then selecting **Residents > Maps > iMaps**.

You must accept the Conditions of Use & Disclaimer before using. When you open iMaps, you should see a screen like the one below and on the left.



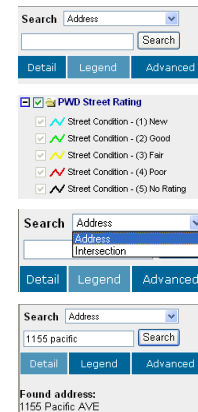
clicking **Map**. The **Advanced** tab is of little use.

If you hover the mouse over the icons to the right of where you selected **Street Condition**, a popup will explain each icon (zoom, pan, etc.).

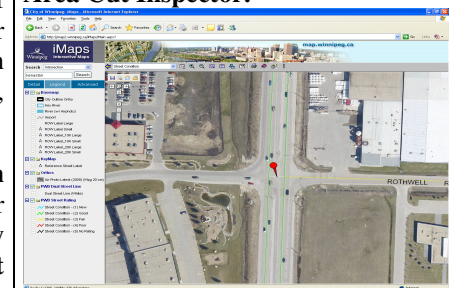
An example of an **Intersection** Search is shown. iMaps indicates that this location is **Good and Fair**.

**If in doubt as to a street condition, and if it will require a larger area for a satisfactory restoration, contact the Area Cut Inspector.**

Where it says **Select Map**, choose **Street Condition**. On the **Legend** tab you will see an explanation of what each color represents with respect to New, Good, Fair, etc.



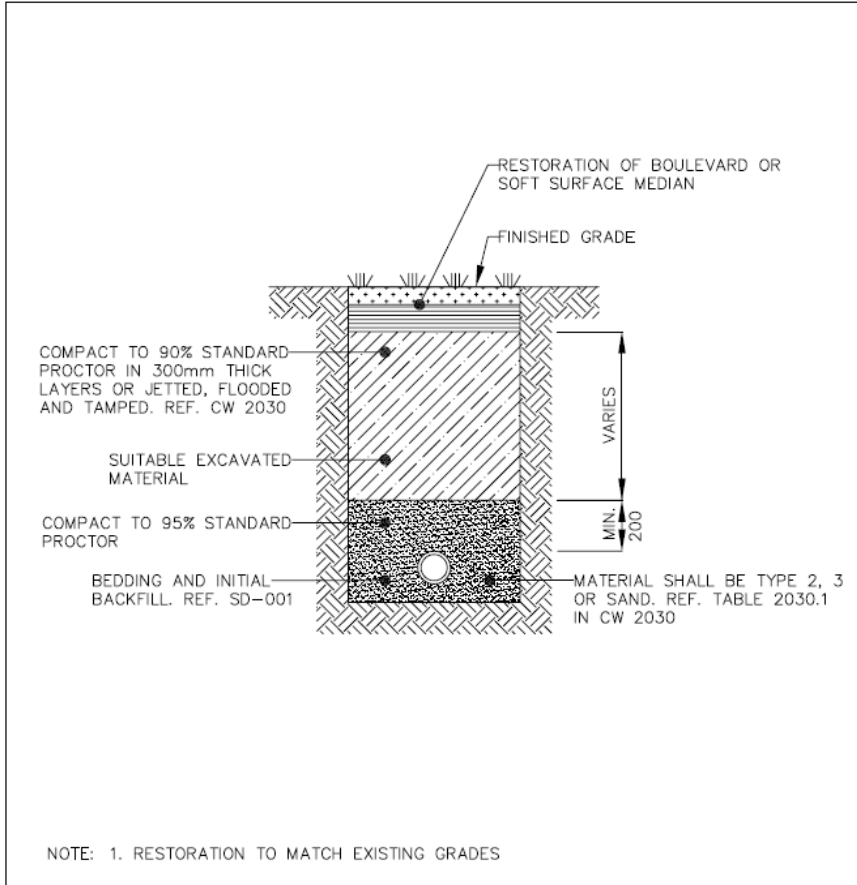
You can **Search** for an **Address**, or **Intersection** by entering the **First Street** and then selecting the **Intersecting Street** on the **Detail** tab and then




Example of iMaps search with Street Condition.

# APPENDIX "B" Standard Trench and Excavation Backfill

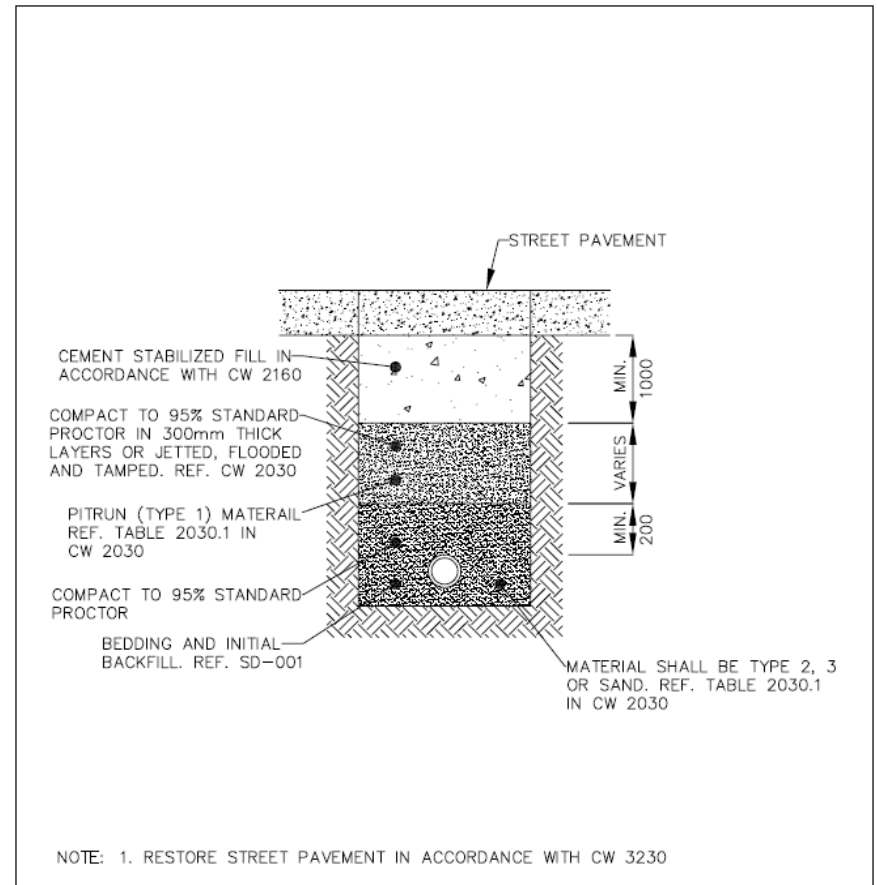
## 1) Under Boulevard or Soft Surface Median




 <b>THE CITY OF WINNIPEG</b> PUBLIC WORKS DEPARTMENT		DIMENSIONS ARE IN MILLIMETRES	
Reference Spec. No. CW 2030		Designed By:	Scale : N.T.S.
STANDARD TRENCH AND EXCAVATION BACKFILL UNDER BOULEVARD OR SOFT SURFACE MEDIAN	Checked By: G.C.	Drawn By: M.B.P.	Drawing No.
	Approved:	Date: 13-02-05	

# APPENDIX "B" Standard Trench and Excavation Backfill

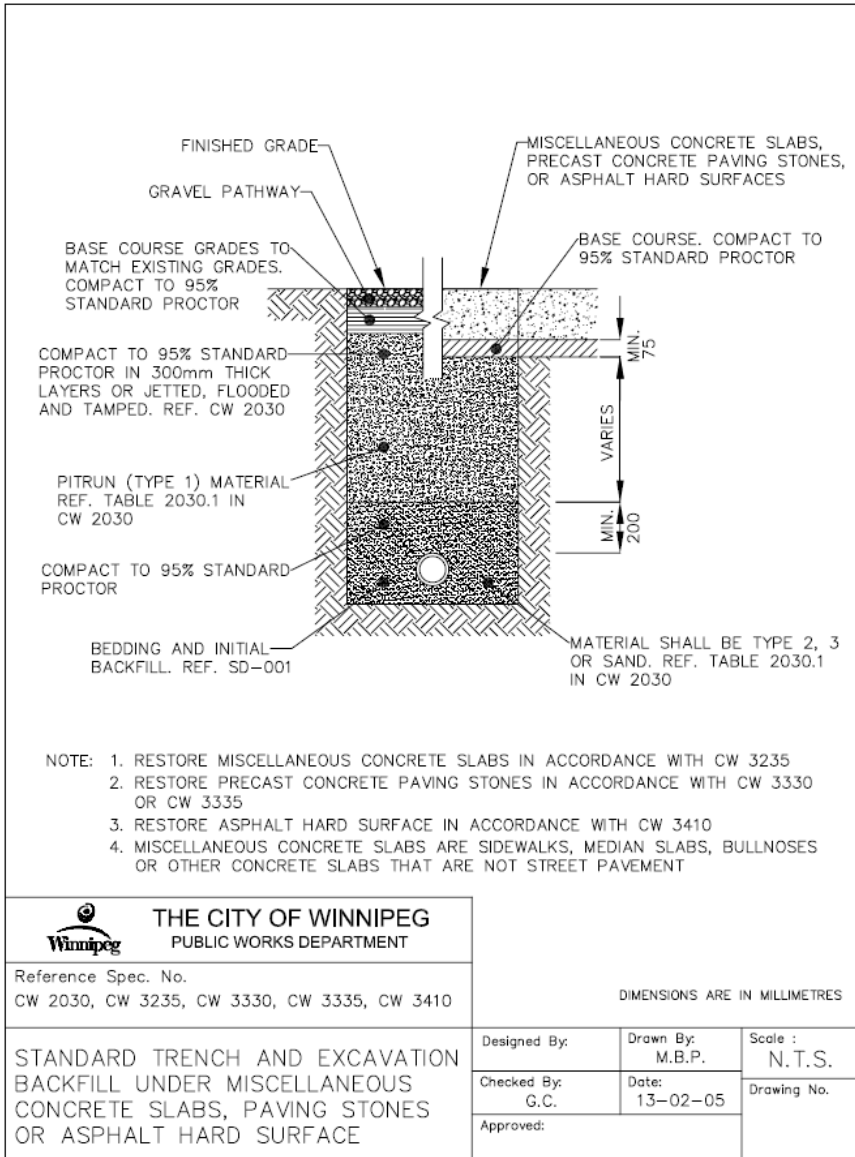
## 2) Under Street Pavement



 <b>THE CITY OF WINNIPEG</b> PUBLIC WORKS DEPARTMENT		DIMENSIONS ARE IN MILLIMETRES	
Reference Spec. No. CW 2030, CW 3230		Designed By:	Scale : N.T.S.
STANDARD TRENCH AND EXCAVATION BACKFILL UNDER STREET PAVEMENT	Checked By: G.C.	Drawn By: M.B.P.	Drawing No.
	Approved:	Date: 13-02-05	

## APPENDIX “B” Standard Trench and Excavation Backfill

### 3) Under Miscellaneous Concrete Slabs, Paving Stones or Asphalt Hard Surface



## APPENDIX “C” Grading Requirements for Imported Backfill

Table CW 2030.1

Canadian Metric Sieve Size	Percent of Total Dry Weight Passing Each Sieve		
	Type 1 Material	Type 2 Material	Type 3 Material
75 000	90% - 100%		
28 000	80% - 100%		100%
20 000		100%	
10 000			100%
5 000	40% - 80%	40% - 70%	0% - 5%
2 500		25% - 60%	
630			25% - 60%
315	10% - 35%	8% - 25%	
80	5% - 30%	6% - 17%	0% - 3%

**NOTE:** - Type 1 Material – well graded pit-run  
- Type 2 Material, Type 3 Material and Sand – bedding and initial materials

## APPENDIX “D” Design Requirements for Concrete Used for Underground Structures

Table CW 2160.1

Type of Structure or Use	C) Cement-Stabilized Fill	D) Flowable Cement-Stabilized Fill
Maximum Size of Aggregate (mm)	20	5
Cement Type	Type GU	Type GU
Maximum Water/Cementing Materials Ratio	Not Applicable	Not Applicable
Compressive Strength at 28 days	1.5 to 2.5 Mpa	1.5 to 2.5 Mpa
Slump/Flow	Not Applicable	200 mm Minimum
Air Content	Not Applicable	20% Minimum
Minimum Cementing Materials Content	As Required to Meet Specified Compressive Strength	

## APPENDIX “E” Concrete for Temporary Restoration of Utility Street Cuts

CW3310 Clause 6.6 (Capping Material)

The concrete supplier shall provide a mix design to be utilized for the temporary restoration of utility street cuts. The concrete shall be capable of supporting vehicular traffic loading within 24 hours of placement. The mix design requirements are as follows:

- i. Minimum cement content = 300 kg/m<sup>3</sup>
- ii. Slump = 120 +/- 20mm
- iii. Air Content = 5% to 8%
- iv. Aggregate Size = 20mm

The grading for the concrete aggregate shall comply with the limits for Type 1 mix shown in Table 1 CW 3310-R6.1 in section 5.3.1. A calcium chloride based admixture meeting the requirements of ASTM C494 shall be used in the concrete mix to ensure adequate early age strengths are achieved.

The admixture dosage shall be adjusted during the year to accommodate changes in air temperatures. The admixture dosage will be dependent upon the Environment Canada minimum forecast temperature during 24 hour period after concrete placement and as follows:

Minimum Curing Temperature after Concrete Placement	Calcium Chloride (based upon mass of cement)
Greater than 0° C	1%
0 to -5° C	2%
Less than -5 to -10° C	3%
Less than -10° C	4%

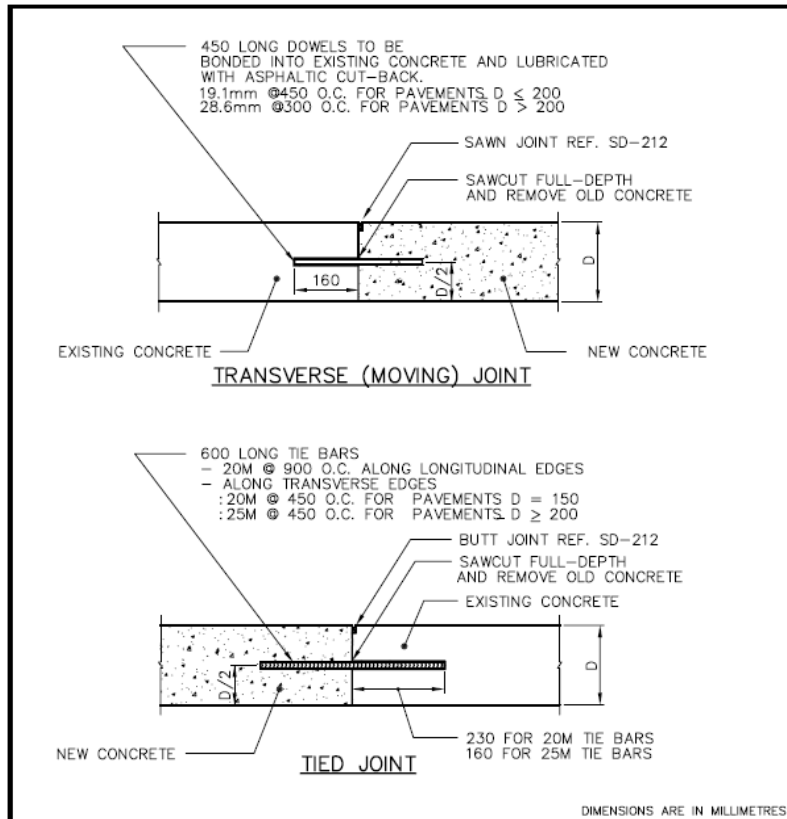
The Mix Design Statement for this concrete shall be submitted to the City of Winnipeg, Research and Standards Engineer for approval in accordance with Clause 6.1 of this specification.



## APPENDIX "F"

### Full Depth Patches: Details of Moving and Tied Joints

SD-213B



## APPENDIX "G"

### Concrete for Early Opening of Pavements

CW 3310 Clause 6.4

The Concrete Supplier shall modify the mix design, as required, in order to ensure that the minimum compressive strength of the concrete pavement is 20 MPa and is achieved within the following early opening requirement:

- 24 hours early opening after placement (Regional)
- 72 hours early opening after placement (Non-Regional)

The Mix Design Statements for this concrete shall be submitted to the City of Winnipeg, Research and Standards Engineer for approval in accordance with Clause 6.1 of this specification.

The requirements of Clause 6.2 shall also apply to concrete for early opening pavement.

<b>THE CITY OF WINNIPEG</b> PUBLIC WORKS DEPARTMENT	Revisions			
	No.	Date	Description	By
Reference Spec. No. CW 3230, CW 3310	3	JAN.11	GENERAL REVISION	GT
	2	FEB.04	GENERAL REVISION	J.G.
	1	JAN. 03	GENERAL REVISION	AP
<b>FULL-DEPTH PATCHES          DETAILS OF          MOVING AND TIED JOINTS</b>	Designed By:	B.P.	Drawn By:	A.R.
	Checked By:	D.R.K.	Date:	94-09-12
	Approved:	SURFACE WORKS COMMITTEE		Scale : N.T.S.
			Drawing No.	SD-213B

## APPENDIX “H” Concrete Strength and Workability

### CW 3310 Clause 6.2

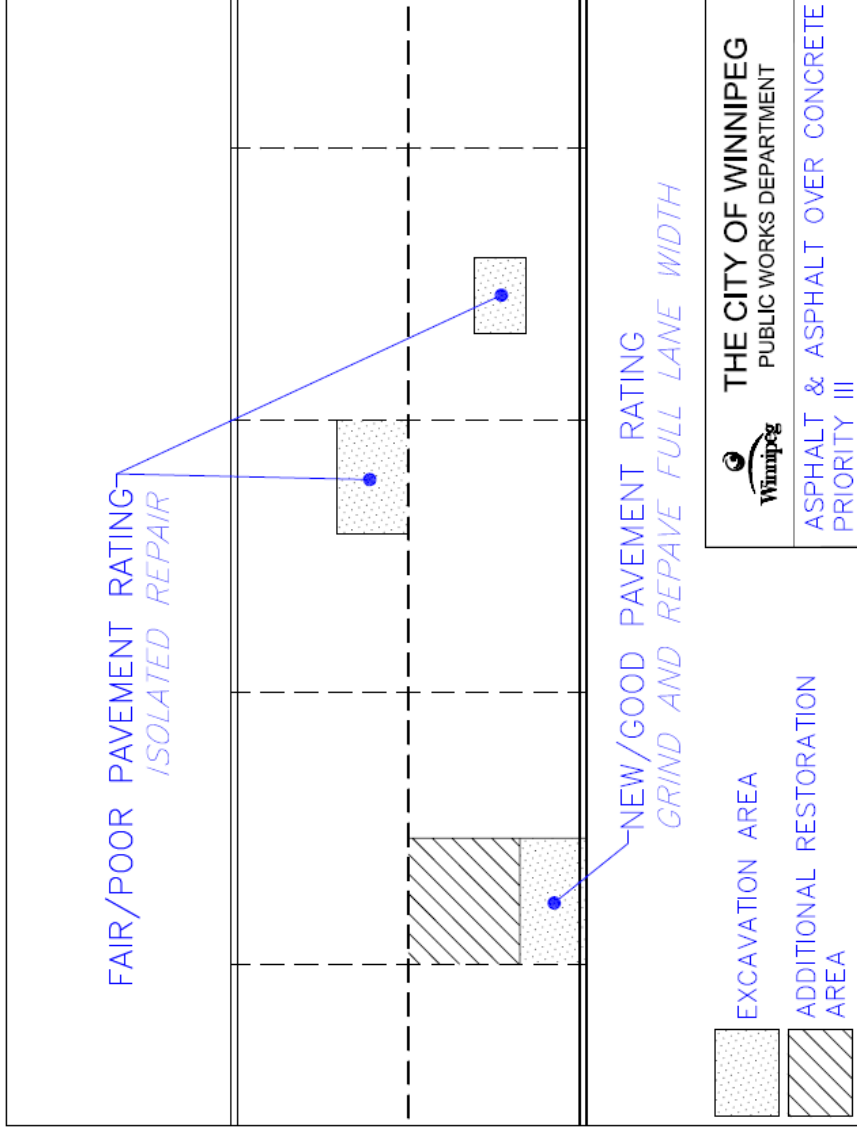
In accordance with CSA A23.1, Alternative (1) for specifying concrete, the concrete mix shall be proportioned such as to yield concrete having the required strength and workability, as follows:

- a) Type 1 – Concrete for Pavements, Commercial Approaches, Curb and Gutter Sections, Curbs, Monolithic Curb and Sidewalks, Splash Strips and Bull-noses:
  - i. Class of Exposure: C-2
  - ii. Minimum Specified Compressive Strength @ 28 days = 32 MPa
  - iii. Minimum Cementitious Content = 340 kg/m<sup>3</sup>
  - iv. Maximum Water/Cementitious Ratio = 0.45
  - v. Slump = 50 +/- 20mm (for slip form paving)  
= 70 +/- 20mm (for hand placement)
  - vi. Aggregate Size = 20mm Nominal
  - vii. Air Content = 5.0% to 8.0%
  
- b) Type 2 – Concrete for Sidewalks, Residential Approaches, Median Slabs and Other Related Concrete Works:
  - i. Minimum Specified Compressive Strength @ 28 days = 30 MPa
  - ii. Minimum Cementitious Content = 300 kg/m<sup>3</sup>
  - iii. Maximum Water/Cement Ratio = 0.49
  - iv. Slump = 80 +/- 20mm
  - v. Aggregate Size = 20mm Nominal
  - vi. Air Content = 5% to 8%

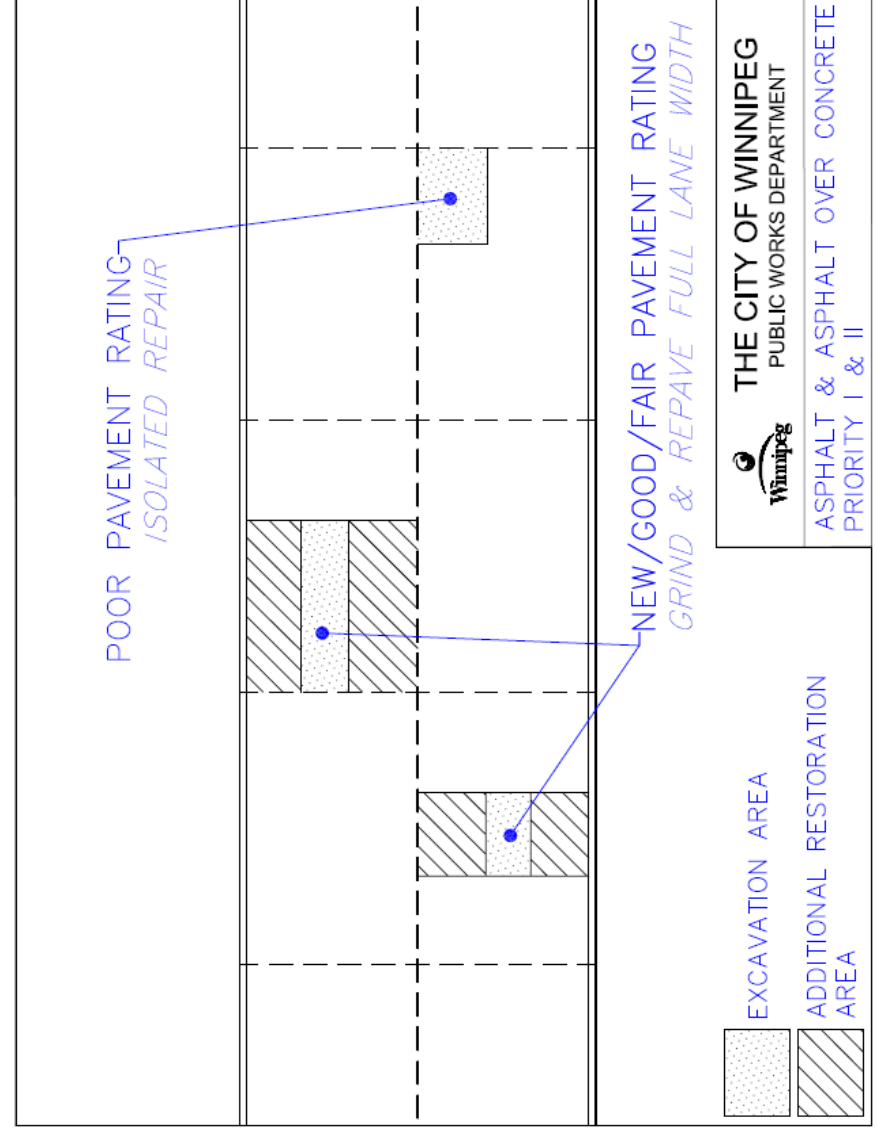
## APPENDIX “I” Protection of Trees

- The Contractor shall not stockpile materials and soil or park vehicles and equipment on boulevards within two (2) metres of trees.
- Trees identified to be at risk by the Contract Administrator are to be strapped with 25 x 100 x 2400mm wood planks, or suitably protected as approved by the Contract Administrator.
- Excavation shall be performed in a manner that minimizes damage to the existing root systems. Where possible, excavation shall be carried out such that the edge of the excavation shall be a minimum of 1.5 times the diameter (measured in inches), with the outcome read in feet, from the closest edge of the trunk. Where roots must be cut to facilitate excavation, they shall be pruned neatly at the face of excavation.
- Operation of equipment within the dripline of the trees shall be kept to the minimum required to perform the work required. Equipment shall not be parked, repaired, refueled; construction materials shall not be stored, and earth materials shall not be stockpiled within the driplines of trees. The dripline of a tree shall be considered to be the ground surface directly beneath the tips of its outermost branches. The Contractor shall ensure that the operations do not cause flooding or sediment deposition on areas where trees are located.
- Work on-site shall be carried out in such a manner so as to minimize damage to existing tree branches. Where damage to branches does occur, they shall be neatly pruned.

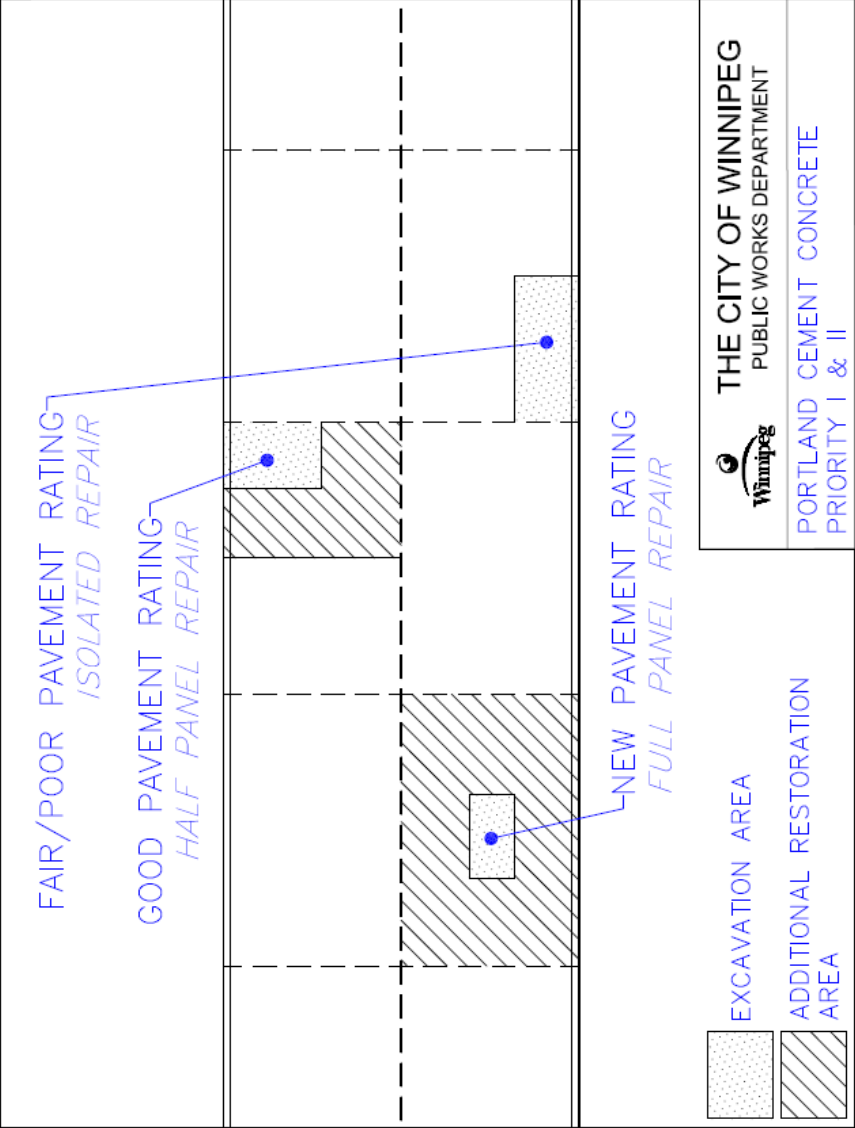
## APPENDIX "J" Asphalt & Asphalt Over Concrete Priority I & II



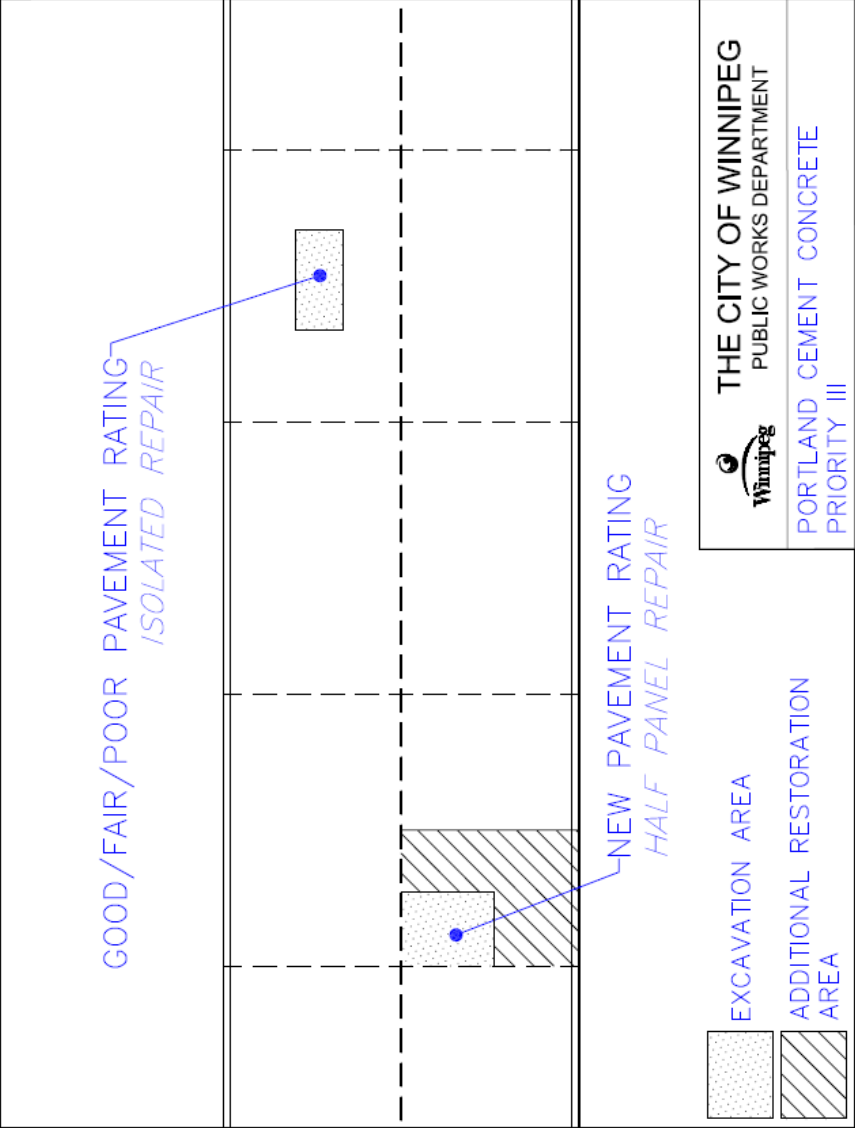
## APPENDIX "K" Asphalt & Asphalt Over Concrete Priority III



**APPENDIX "L"**  
**Portland Cement Concrete**  
**Priority I & II**



**APPENDIX "M"**  
**Portland Cement Concrete**  
**Priority III**



## APPENDIX “N” Schedule “E” To Streets By-Law No. 1481/77

By-law No. 1481/77

38

### SCHEDULE “E” TO STREETS BY-LAW NO. 1481/77 *amended 7669/2000; 97/2003; 174/2005; 155/2008; 61/2010; 63/2010; 153/2012*

List of streets on which trucks or other equipment may not be stored, nor on which any work may take place between the hours of 07:00 and 09:00 and between the hours of 15:30 and 17:30, on any day excepting Saturdays, Sundays and public holidays, except where emergency repairs are being carried out or except if permission to do so has been received from the Director of Public Works.

(Section 4.12.09)

<u>STREET</u>	<u>FROM</u>	<u>TO</u>
Academy Road	Maryland Bridge	Kenaston Boulevard
Alexander Avenue	Main Street	Princess Street
Archibald rue	CPR Keewatin Subdivision	Fermor Avenue
Arlington Street	Portage Avenue	Inkster Boulevard
Arlington Street Bridge		
Balmoral Street	Notre Dame Avenue	Ellice Avenue
Bishop Grandin Boulevard	Kenaston Boulevard	Lagimodiere Boulevard
Bison Drive	Kenaston Boulevard (northbound)	Kenaston Boulevard (southbound)
Bison Drive	Waverley Street	Pembina Highway
Broadway	Portage Avenue	Main Street
Brookside Boulevard	Mollard Road	Oak Point Highway
Carlton Street	Notre Dame Avenue	Broadway
Century Street	St. James Bridge	Dublin Avenue
Century Street/Portage Avenue Interchange		
Chancellor Matheson Road	Pembina Highway	University Crescent
Chancellor Drive	Pembina Highway	A point 100 m west
Chief Peguis Trail	Main Street	Lagimodiere Boulevard
Colony Street	Portage Avenue	Ellice Avenue
Colony Street	St. Mary Avenue	York Avenue
Concordia Avenue	Gateway Road	Lagimodiere Blvd.
Concordia Overpass		
Comish Avenue	Maryland Street	Sherbrook Street
Corydon Avenue	Donald Street	Roblin Boulevard
Cumberland Avenue	Maryland Street	Donald Street

*amended 80/2011*

## APPENDIX “N” Schedule “E” To Streets By-Law No. 1481/77

By-law No. 1481/77

39

Dakota Street	St. Mary's Road	Aldgate Road
Des Meurons rue	Provencher Boulevard	Marion Street
Day Street	Pandora Avenue	Regent Ave West
Disraeli Bridge and Overpass		
Disraeli Freeway	Main Street	Disraeli Bridge
Disraeli Freeway Interchange		
Disraeli Street	Sutherland Avenue	Rover Avenue
Donald Street	Notre Dame Avenue	McMillan Avenue
Dublin Avenue	Notre Dame Avenue	King Edward St.
Dublin Avenue Crossing of Omand's Creek		
Dufferin Avenue	Salter Street	McGregor Street
Dugald Road	Lagimodiere Boulevard	P.T.H. 101
Dugald Road Overpass of the CNR Line West of Terracon Place		
Dunkirk Drive	St. Vital Bridge	St. Mary's Road
Dunkirk Drive/Kingston Row/Churchill Drive Interchange		
Eastway	Empress Street	Empress St. East
Edmonton Street	Broadway	Portage Avenue
Edmonton Street	Ellice Avenue	Cumberland Ave.
Ellice Avenue	Notre Dame Avenue	Ferry Road
Empress Street East	Doreen Street	Rapelje Avenue
Empress Street	Portage Avenue	Wellington Ave.
Empress Street Overpass		
Erin Street	Notre Dame Avenue	Portage Avenue
Fermor Avenue	Dunkirk Drive	Plessis Road
Fermor Avenue Crossing of Seine River		
Ferry Road	Portage Avenue	Ellice Avenue
Fort Street	Broadway	Portage Avenue
Fort Garry Bridges		
Garry Street	Broadway	Ellice Avenue
Gateway Road	Munroe Avenue	Chief Peguis Trail
Gladstone Street		
Goulet Street	Sutherland Avenue	Disraeli Street
Graham Avenue	St. Mary's Road	Youville Street
Grant Avenue	Vaughan Street	Main Street
Grassie Boulevard	Pembina Highway	Roblin Boulevard
	Lagimodiere Boulevard	Plessis Road

*amended 80/2011*

## APPENDIX “N” Schedule “E” To Streets By-Law No. 1481/77

By-law No. 1481/77

40

Hargrave Street	Broadway	Notre Dame Avenue
Harkness Avenue	Stradbrook Avenue	Mayfair Avenue
Henderson Highway	Disraeli Bridge	Glenway Avenue
Henderson Highway/ Talbot Avenue Interchange		
Hespler Avenue	Redwood Bridge	Henderson Highway
Higgins Avenue	Princess Street	Louise Bridge
Inkster Boulevard	Main Street	Brookside Boulevard
Isabel Street	Notre Dame Avenue	Logan Avenue
James Avenue	King Street	Main Street
Johnson Avenue	Henderson Highway	Levis Street
Jubilee Avenue	Osborne Street	Pembina Highway
Jubilee Overpass of Pembina Highway		
Keewatin Street	Notre Dame Avenue	Old Commonwealth Path
Kenaston Boulevard	Provincial Trunk Highway No. 100	St. James Bridge
Kenaston Boulevard/ St. James Bridge Interchange		
Kennedy Street	Cumberland Avenue	Ellice Avenue
Kennedy Street	Portage Avenue	Broadway
Kildonan Settlers Bridge		
King Street	Smith Street	Higgins Avenue
King Edward Street E.	St. Matthews Avenue	King Edward Street
King Edward Street	King Edward Street E.	Oak Point Highway
King Edward Street Crossing of Omand's Creek		
Kintyre Street	St. James Bridge	Portage Avenue
Lagimodiere Blvd.	John Bruce Road	North City Limit
Lagimodiere Boulevard/ Concordia Avenue Interchange		
Lagimodiere Blvd. Overpass of CNR Reddit Subdivision		
Leila Avenue	Agnes Arnold Place	Main Street
Levis Street	Johnson Avenue	Watt Street
Levis Street	Naim Avenue	Talbot Avenue
Logan Avenue	Disraeli Freeway	King Edward Street
Louise Bridge		

## APPENDIX “N” Schedule “E” To Streets By-Law No. 1481/77

By-law No. 1481/77

41

McGillivray Blvd.	Pembina Highway	Southwest City Limit
McGregor Street	Dufferin Avenue	Templeton Avenue
McMillan Avenue	Donald Street	Osborne Street
McPhillips Street	Notre Dame Avenue	North City Limit
Main Street	Assiniboine River	North City Limit
Main/Norwood Bridges		
Marion Street	St. Mary's Road	Lagimodiere Blvd.
Maryland Bridges		
Maryland Street	Notre Dame Avenue	Maryland Bridge
Mayfair Avenue	Harkness Avenue	Queen Elizabeth Way
Memorial Boulevard	York Avenue	Portage Avenue
Midtown Bridge		
Midwinter Avenue	Henderson Highway	Stadacona Street
Mission Street	Plinguet Street	Panet Road
Mountain Avenue	Main Street	McPhillips Street
Moray Street	North Bank of the Assiniboine River	Ness Avenue
Munroe Avenue	Henderson Highway	Gateway Road
Naim Avenue	Stadacona Street	Panet Road
Naim Overpass		
Ness Avenue	Sturgeon Road	St. James Street
Notre Dame Avenue	Portage Avenue	King Edward Street
Oak Point Highway	King Edward Street	Brookside Boulevard
Osborne Bridge		
Osborne Street	St. Mary Avenue	St. Vital Bridge
Pandora Avenue E.	Day Street	Ravenhurst Street
Partridge Avenue	Leila Avenue	Main Street
Pembina Highway	Osborne Street	South City Limit
Pembina Highway/ Bishop Grandin Blvd. Interchange		
Pembina Highway Crossing of La Salle River		
Pembina Highway/Jubilee Avenue Interchange		
Pioneer Avenue	Main Street	Provencher Bridge
Plessis Road	P.T.H. 1 East	Grassie Boulevard
Portage Avenue	Main Street	St. Charles Street
Portage Avenue Crossing of Omand's Creek		
Portage Avenue Crossing of Sturgeon Creek		
Portage Avenue East	Westbrook Street	Main Street
Prairie Grove Road	St. Anne's Road	P.T.H. 59

**APPENDIX “N”**  
**Schedule “E” To Streets By-Law No. 1481/77**

By-law No. 1481/77

42

Princess Street Provencher Blvd. Provencher Boulevard Crossing of Seine River Provencher Bridge	Notre Dame Avenue Archibald rue	Higgins Avenue Provencher Bridge
Queen Elizabeth Way Queen Street	Assiniboine River Portage Avenue	Red River Century Street Ramp
Ravenhurst Street Redwood Avenue Redwood Bridge Regent Avenue River Avenue River Road Riverton Avenue Roblin Boulevard	Pandora Avenue E. Salter Street	Dugald Road Redwood Bridge
St. Anne's Road St. James Bridges and Interchange St. James Street St. John Ambulance Way St. Mary Avenue St. Mary's Road St. Vital Bridges Salter Street Sargent Avenue Saskatchewan Avenue Selkirk Avenue Shaftesbury Blvd. Sherbrook Street Silver Avenue Silver Avenue Slaw Rebchuck Bridge Smith Street Spence Street	Panet Road Harkness Avenue St. Vital Road Henderson Highway Corydon Avenue	Day Street Wellington Crescent St. Mary's Road Midwinter Avenue Provincial Trunk Highway No. 100 Forbes Road
St. Anne's Road St. James Bridges and Interchange St. James Street St. John Ambulance Way St. Mary Avenue St. Mary's Road St. Vital Bridges Salter Street Sargent Avenue Saskatchewan Avenue Selkirk Avenue Shaftesbury Blvd. Sherbrook Street Silver Avenue Silver Avenue Slaw Rebchuck Bridge Smith Street Spence Street	St. Mary's Road	Notre Dame Avenue Empress Street East Spence Street Red River Floodway
Stadacona Street Stafford Street Sterling Lyon Parkway	Portage Avenue Portage Avenue Main Street Red River	Leila Avenue Edmonton Street Sturgeon Road Main Street Corydon Avenue Logan Avenue Hamilton Avenue St. James Street
	Logan Avenue Ferry Road P.T.H. 101 McPhillips Street Wilkes Avenue Maryland Bridge Sturgeon Road Century Street	Notre Dame Avenue Portage Avenue
	Midtown Bridge St. Mary Avenue	Notre Dame Avenue Portage Avenue
	Louise Bridge Pembina Highway Wilkes Avenue	Talbot Avenue Academy Road McCreary Road/ Shaftesbury Boulevard

*deleted 80/2011*

**APPENDIX “N”**  
**Schedule “E” To Streets By-Law No. 1481/77**

By-law No. 1481/77

43

Stradbrook Avenue Sturgeon Road Sturgeon Road Crossing of Sturgeon Creek	Wellington Crescent Portage Avenue	Queen Elizabeth Way North City Limit
Tache Avenue Talbot Avenue Taylor Avenue Tim Sale Drive Tuxedo Avenue	St. Mary's Road Riverton Avenue Pembina Highway Waverley Street Kenaston Boulevard	Provencher Boulevard Stadacona Street Kenaston Boulevard Waverley Street Corydon Avenue
University Crescent	Pembina Highway	Chancellor Matheson Road
Vaughan Street	York Avenue	Elice Avenue
Wall Street Warde Avenue Waterfront Drive Watt Street Waverley Street Waverley Street	Portage Avenue St. Mary's Road Pioneer Avenue CPR Keewatin Subdivision Grant Avenue Tim Sale Drive	Notre Dame Avenue St. Anne's Road York Avenue Munroe Avenue Kenaston Boulevard Provincial Trunk Highway No. 100 Empress Street River Avenue
Wellington Avenue Wellington Crescent Westbrook Street Weston Street Westway Wilkes Avenue Wilkes Avenue	Winnipeg International Airport Academy Road Water Avenue Notre Dame Avenue Empress Street Waverley Street McCreary Road/Shaftesbury Boulevard Main Street North Bank of the Assiniboine River Main Street Colony Street Goulet Street	Portage Avenue E. Logan Avenue Empress Street E. Sterling Lyon Parkway Provincial Trunk Highway No. 100 McPhillips Street Grant Avenue Provencher Bridge Waterfront Drive Marion Street
William Avenue William R. Clement Parkway William Stephenson Way York Avenue Youville Street		

## MISSION STATEMENT

*The management and effective restoration of excavations in the Right of Way, which ensures quality and continued use of our City's street infrastructure to the satisfaction of our customer.*



Published by:  
The City of Winnipeg  
Public Works Department  
Engineering Division  
106-1155 Pacific Avenue  
Winnipeg, MB, Canada R3E 3P1



**Winnipeg**  
**at your service.**